Nuvo-11531/ Nuvo-11588

Intel® Core™ Ultra 200S Compact Fanless Computer with 4x PoE+ 2.5GbE, 4x USB 3.2, 1x Easy-Swappable 2.5" SSD Tray, and 1x External SlimSAS Connector

Key Features

- 212 x 165 x 63 mm low-profile design
- Intel® Core™ Ultra 200S series 35W/ 65W LGA1851 CPU
- Rugged, -25°C to 60°C fanless operation
- Up to 64GB DDR5 6400 memory
- 4x 2.5GbE with optional PoE+ and 4x USB3.2 Gen1 with screw-lock
- 1x M.2 2280 Gen4x4 NVMe and 1x swappable 2.5" SSD tray for storage
- 1x PCIe Gen4x8 via SlimSAS 8i (SFF-8654) connector (Nuvo-11588 only)
- 8V to 48V wide-range DC input with optional ignition power control

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Introduction

The Nuvo-11531 is one of the most compact fanless embedded AI computers powered by the Intel® Core™ Ultra 200S series. Its low-profile 212 x 165 x 63 mm footprint makes it ideal for constrained spaces, including robotic arms, AMRs, machine vision systems, and roadside cabinets.

Despite its compact size, the Nuvo-11531 does not compromise on performance. Leveraging TSMC's advanced 3nm process, Intel® Core™ Ultra 200S processors can offer nearly 120% the performance while consuming only 80% of the power*. Furthermore, with the new NPU and integrated GPU, Intel® Core™ Ultra 200S processors deliver up to 36 TOPS, enhancing AI inspection capabilities for existing rule-based computer vision algorithms.

Designed for diverse edge applications—such as machine vision, AMRs, and smart automation—the Nuvo-11531 offers versatile sensor connections. It features four PoE+ 2.5GbE ports and four USB 3.2 Gen1 ports for industrial/ security cameras or LiDAR, along with multiple isolated DIO and dual COM ports for communication with external devices. Internally, it includes one M.2 E-key slot for Wi-Fi modules and two mPCIe slots for flexible I/O expansion, supporting 5G/4G modules, COM ports, CAN bus, or additional GbE ports. For data storage, it provides an internal Gen4x4 M.2 NVMe slot for the OS and an easy-swappable 2.5" SSD tray for data logging. The wide DC input and optional ignition power control are ideal for battery-powered applications, such as robotics and in-vehicle usage. Additionally, the Nuvo-11588 variant features a SlimSAS connector with PCIe Gen4x8 bandwidth for external NVMe, U.2 storage, industrial PCIe cameras, or GPUs.

As compact embedded computers, the Nuvo-11531 and Nuvo-11588 deliver exceptional computing performance and extensive I/O connectivity. They are well-suited for various industrial and edge applications, including smart factories, autonomous logistics, smart cities, and robotics—particularly where installation space is limited.

Benchmarked using PassMark PerformanceTest.

Specifications

	Nuvo-11531	Nuvo-11588
System Core		
Processor	Supports Intel® Core™ Ultra 200S series Processor (LGA 1851 socket), 35W and 65W TDP - Intel® Core™ Ultra 9 285/285T - Intel® Core™ Ultra 7 265/265T - Intel® Core™ Ultra 5 245/245T	
Chipset	Intel® H810 platform controller hub	Intel® Q870 platform controller hub
Graphics	Integrated Intel X® LPG Graphics	
AI Engine	Integrated neural processing unit	
Memory	Up to 64GB DDR5 6400 memory via one SODIMM slot	
TPM	fTPM 2.0 (standard) / dTPM 2.0 (optional)	
Panel I/O Interface		
Ethernet	4x 2.5GBASE-T Ethernet ports with screw-lock by Intel® I226 GbE controllers. Port 4 supports Wake-on-LAN (WOL)	
PoE+	Optional IEEE 802.3at PoE+ PSE for 4x 2.5GbE ports (100W total power budget)	IEEE 802.3at PoE+ PSE for 4x 2.5GbE ports (100W total power budget)
External PCIe Connector	-	1x PCIe Gen4x8 via SlimSAS 8i (SFF-8654) connector
USB	4x USB 3.2 Gen1 (5 Gbps) ports with screw-lock 2x USB 2.0 ports	
Video Port (Integrated Graphics)	1x HDMI, supporting 3840 x 2160 resolution 1x DisplayPort, supporting 3840 x 2160 resolution *The DisplayPort does not support DP++. Use an active DP-to-HDMI adapter for HDMI output.*	
Serial Port	1x software-programmable RS-232/422/485 ports (COM1) 3x 3-wire RS-232 ports (COM2/ 3/ 4) or 1x RS-422/ 485 port (COM2)	
Isolated DIO	4-CH isolated DI and 4-CH isolated DO	8-CH isolated DI and 8-CH isolated DO
Internal Expansion Bus		
Mini PCI Express	2x full-size mini PCI Express sockets with internal SIM sockets	
M.2 E	1x M.2 2230 E key socket for WiFi module	

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Storage Interface		
SATA HDD	1x easy-swappable 2.5" HDD/ SSD tray for 7mm HDD/ SSD	
M.2 M	1x M.2 2280 M key socket (PCIe Gen4x4) for NVMe SSD	
Power Supply		
DC Input	1x 3-pin pluggable terminal block for 8V to 48V DC input with optional ignition power control [1]	
Mechanical		
Dimension	212 mm (W) x 165 mm (D) x 63 mm (H)	
Weight	2.2 kg (excluding wall mount kits)	
Mounting	Wall-mount (standard) or DIN-rail mount (optional)	
Environmental		
Operating Temperature	With 35W CPU -25°C to 60°C [2] With 65W CPU (installation of the optional fan kit is recommended) -25°C to 60°C [2][3]	
Storage Temperature	-40°C to 85°C	
Humidity	10% to 90%, non-condensing	
Vibration	MIL-STD-810H, Method 514.8, Category 4	
Shock	MIL-STD-810H, Method 516.8, Procedure I	
EMC	CE/FCC Class A, according to EN 55032 & EN 55035	

[1] The maximum input current for each pin is 20A. While using the PoE+ feature, the allowable DC input range is 12V to 48V.
[2] For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.
[3] For 65W CPUs, the optional fan kit is recommended for operating at ambient temperatures higher than 50°C.

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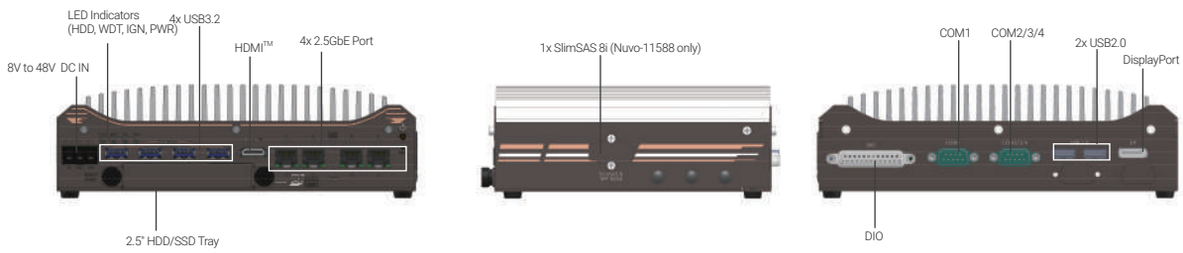
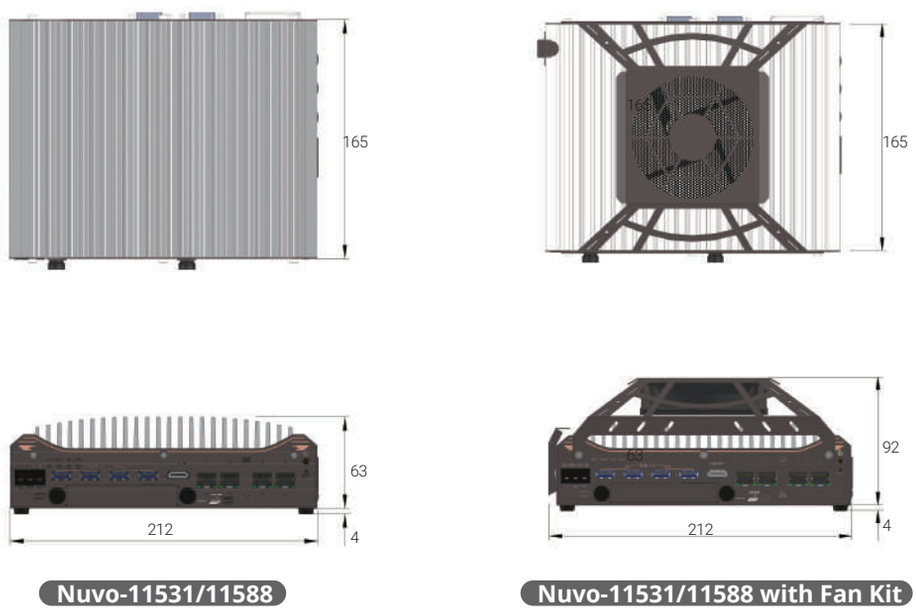
Appearance



Dimensions



Unit : mm

Nuvo-11531/11588

Nuvo-11531/11588 with Fan Kit

Ordering Information

Model No.	Product Description
Nuvo-11588-PoE	Intel® Core™ Ultra 200S compact fanless computer featuring 4x PoE+ 2.5GbE, 4x USB 3.2, 1x easy-swappable 2.5" SSD tray and 1x external SlimSAS connector
Nuvo-11531-PoE	Intel® Core™ Ultra 200S compact fanless computer featuring 4x PoE+ 2.5GbE, 4x USB 3.2, 1x easy-swappable 2.5" SSD tray
Nuvo-11531	Intel® Core™ Ultra 200S compact fanless computer featuring 4x 2.5GbE, 4x USB 3.2, 1x easy-swappable 2.5" SSD tray
Optional ignition power control	

Optional Accessories

PA-160W-OW	160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30°C to 70°C.
PA-280W-ET2	280W AC/DC power adapter 24V/ 11.67A ; 16AWG/ 100cm ; cord end terminals for terminal block, operating temperature : -30°C to 60°C. (recommended for 65W CPU)
DINRAIL-31	DIN-rail mounting assembly for Nuvo-11588/ Nuvo-11531/ Nuvo-11501/ Nuvo-9531 series
AccsyBx-FAN-Nuvo11531_11501	Fan kit with 92mm x 92mm fan for Nuvo-11588/ Nuvo-11531/ Nuvo-11501 series

All specifications and photos are subject to change without prior notice